

What is Claimed is:

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1. A replacement construct comprising a degradable, polymeric fiber-based, three-dimensional braided scaffold.
  2. A replacement construct comprising a degradable polymeric fiber-based, three-dimensional braided scaffold seeded with cells, ingrowth of which is support by the scaffold.
  3. The replacement construct of claim 2 where the cells are mesenchymal in origin.
  - 10 4. The replacement construct of claim 2 wherein the cells generate mesenchymal cells.
  5. The replacement construct of claim 4 wherein the cells are pluripotent stem cells.
  - 15 6. A method for repairing, replacing or reconstructing a damaged tendon or ligament in a patient comprising implanting at a damaged tendon or ligament the replacement construct of claim 1.
  - 20 7. A method for repairing, replacing or reconstructing a damaged tendon or ligament in a patient comprising implanting at a damaged tendon or ligament the replacement construct of claim 2.
  8. A method for producing a graft material composed of living cells in a degradable matrix comprising:
    - (a) harvesting, growing and passaging cells in tissue culture; and
    - (b) seeding the cultured cells onto the degradable, polymeric fiber-based, three-dimensional braided scaffold of claim 1.
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9. The method of claim 8 wherein the cells are mesenchymal in origin.

10. The method of claim 8 wherein the cells generate mesenchymal cells.

5 11. The method of claim 10 wherein the cells are pluripotent stem cells.

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